Introduction

The explosive rate of technological progress in the development of information systems has not benefited all users to the same degree. Even with the appearance of advanced information retrieval systems and the availability of previously printed texts in electronic form, for many library users, the main purpose of computers in libraries is still to provide fast and precise access to printed documents, not electronic files. In academic settings, this is particularly true for humanistic scholars for whom the traditional print-oriented library is laboratory, toolkit, and the single most important source of scholarly materials. Although there has been no shortage of fantasizing about the all-electronic library, even in the more technologically advanced academic institutions, literary work is practiced by many scholars using techniques differing little from those in use a century ago. These patterns, however, are changing. Literary scholars no longer have to learn computer programming in order to gain useful access to literature in electronic form: programs are now available that are capable of performing in minutes analytical tasks that used to take months; scholars are beginning to create electronic editions of classic literary works and are pooling their efforts to make those texts available to others; new fast and efficient delivery systems for electronic texts are beginning to appear; working prototypes of fully electronic libraries are now in operation in academic library settings. Scholarly work in the humanities that bypasses print altogether is now possible.

The papers in this volume explore the potential of electronic texts in the humanities and describe the possible roles for libraries as electronic

books take the place of printed ones. This apparently simple topic embodies a considerable amount of complexity, however. Glancing over these papers, it is easy to see that the question of literary texts in the humanities spans many areas of interest, reflecting the various needs of librarians, publishers, system administrators, scholars, readers, and writers. It is one purpose of this collection to bring these diverse perspectives into conjunction. Given this assortment of points of view, it is perhaps not surprising that a number of different themes emerge. A few, however, stand out.

One significant theme is the pivotal role that humanities scholars themselves have played in the development of electronic approaches to literary studies. Over the last several decades, researchers in the humanities have educated themselves about computers and applied them to their own unique text processing needs, sometimes under adverse conditions and often alone because there was no one else to do it. This work, small in scale at first, has had significant consequences, transforming both research and education in the literary disciplines. Humanists have come to realize that not only can computer technology provide better, faster ways of accomplishing traditional scholarly tasks, but it also constitutes a way of articulating and solving new kinds of scholarly problems, answering questions that had never been asked before. Many of the basic concepts upon which full-text information systems in the humanities are based have their roots in this research, and the scholarly community continues to play a leading role in this work.

These efforts have not been without obstacles, however. Many scholars have experienced the problem, all too common in the academic world, of freeing themselves from the restrictions of print only to find themselves subject to new and more perplexing forms of electronic bondage. Developing an expertise in information technology, however necessary, is not always a high priority for literary scholars, nor should it be. To become distracted by computers is to risk being drawn away from scholarly pursuits. Here is where librarians, whose role in humanities scholarship has traditionally been one of archiving, organizing, and disseminating texts, have become significant contributors. Collaborations involving library organizations such as RLIN and the Library of Congress, not to mention several university libraries that have taken a leading role in this area, and scholarly societies such as the Association for Computers and the Humanities and the Association for Literary and Linguistic Computing, have been fruitful in advancing the cause of electronic approaches to humanities research. More recently, electronic publishers such as Chadwyck-Healey and software developers such as the Open Text Corporation have provided useful electronic products. The collective result of these efforts has been a quickening

of the pace at which texts are converted into electronic formats, the development of software for textual analysis suitable to the needs of literary scholars, broader sharing and dissemination of electronic texts, and new possibilities for humanities education.

Another theme that emerges in these papers is the importance of standards. In the earlier years of humanities computing, scholars had to adapt whatever hardware and software was at hand in order to create electronic editions and develop analytical tools. There was a great deal of reinvention of the wheel, and many of the resulting systems were incompatible, making it difficult for one scholar to reuse electronic texts produced by another. Today, scholars working with electronic texts in the humanities must continue to make choices among various hardware platforms, operating systems, markup systems, file types, storage media, processing tools, character sets, and delivery systems. But because of progress in the development of standards, the choices are safer, and the possibilities for reuse are much improved. The Text Encoding Initiative's application of Standard Generalized Markup Language is one example. Another is the recent work in adapting the MARC record for the description and cataloging of electronic texts. The latter project has been a particular challenge because of the unique features of electronic texts, which do not possess a physical form in the usual sense, exist potentially in multiple formats, and are susceptible to rapid and unannounced modification. But success in this area is essential if libraries are going to be able to retain bibliographic control over this new medium.

The incorporeality of the electronic book leads to another significant issue: the development of new delivery mechanisms. The publication of texts in magnetic and optical formats creates certain new problems for libraries, but it remains possible to treat such documents as if they were books, since they remain, after all, tangible objects. Purchasing, cataloging, marking, storing, and circulating these items are possible with existing library systems. Some electronic texts, however, do not exist in any particular place or take any lasting tangible form but may instead be disseminated on demand over computer networks. Libraries are beginning to realize the revolutionary potential of the Internet in providing a form of remote storage that includes the possibility of fast transfer of documents directly into the hands of the users at the moment the request is made, supplementing or even replacing local ownership. With interfaces such as Mosaic capable of delivering not just text but full-color images, sound, and motion pictures, the electronic book begins to diverge in significant ways from the printed monograph. It is even possible for a "book" requested and received by the reader to be assembled on the fly at the moment of the request from various components stored in separate locations. Such remote archives will certainly benefit from

all-electronic systems of publications that are currently under development. By streamlining the chain of events that leads from author to reader, these systems will radically alter certain traditional roles, among them the role of librarians in acquiring and organizing texts. But at the same time, there are likely to be new roles for librarians, requiring familiarity with new technologies and an interest in developing new kinds of delivery services that are radically different from those that have been offered in the past.

Traditionally, librarians have provided texts, and scholars were responsible for the analysis of those texts. Another consequence of electronic text processing systems has been the blurring of these two roles. Systems are now available that not only deliver literary texts but that provide analytical utilities as well. There is no exact analogue in the traditional library for documents that come with their own processing tools, but is perhaps best viewed as a novel and powerful extension of the reference function. With such systems in place, is it unreasonable for libraries to consider taking over some of the analytical tasks of humanistic research? Although we may well expect that not every library will choose to do so, this is an interesting area for the expansion of library services. Such a scenario adds to the two familiar library functions of ownership and archiving a third area of responsibility—processing. The academic library is evolving under the effect of these changes. At some institutions, it has meant the installation of computer centers that resemble laboratories or classrooms. Effective implementation of these new services will depend on librarians' understanding of the diverse needs of the library's users, who may include researchers, educators, students, and the general reading public, and their successful handling of new versions of old questions about equity of service and budget priorities.

For every opportunity, there is a problem to solve, and these papers bring to light a number of these problems. One of the most vexing is the problem of copyright, a principle born of the age of mechanical printing and increasingly problematic in a world dominated by fast-moving and easily duplicated electronic commodities. The new technologies seem at nearly every point to undercut the control applied by copyright, encouraging the creation of new forms of control that frustrate the efforts of libraries to provide the free and open service that is traditionally their mission. The copyright problems are only a part of larger economic questions raised by electronic media. How these will affect the role of academic presses, the ability of authors to make a fair profit from their work, and, more generally, the structure of the information cycle are questions that are as yet unresolved.

Ultimately, as humanities scholars themselves have pointed out, the development of electronic texts may affect not just the future of

libraries but the evolution of reading and literacy. There is evidence that the electronic text is in some settings less concrete, less linear, more interactive, and more mutable than printed text. Moreover, electronic communication has the potential of changing the relationship between writer and reader and altering control mechanisms and power relationships. We know that when traditional texts are converted into electronic form, new possibilities emerge; what are the possibilities for literary works created specifically for electronic media? Does the hypertext book represent, as some suggest, an important new form of human literary expression? It is at least becoming more difficult to view electronic texts as mere transformations of traditional codices and increasingly reasonable to see them as a new evolutionary stage in the history of human expression that includes the emergence of alphabetical writing and printing. The consequences of these new technologies for literary culture and for libraries are only dimly perceived at this early stage, but these papers help suggest the directions that these changes may take.

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